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29. ADDITIONS TO THE GRASS GENERA OF NORTH-WEST RAJASTHAN<sup>1</sup>H.K. TAKHAR<sup>2</sup> AND S.S. KATEWA<sup>3</sup><sup>1</sup>Accepted January 03, 2006<sup>2</sup>Gram Post Badusar, via Roru-Bari, Dist. Sikar, Rajasthan 332 317, India. Email: hktakhar@yahoo.com<sup>3</sup>Laboratory of Ethnobotany and Agrostology, Department of Botany, College of Science, Udaipur 313 001, Rajasthan, India. Email: sskatewa@yahoo.com

Intensive and extensive survey over the last seven years on the grass flora, Family Poaceae, of north-western Rajasthan (comprising ten districts of north-west Rajasthan, namely Barmer, Churu, Ganganagar, Hanumangarh, Jaisalmer, Jodhpur, Nagaur, Sikar and Jhunjhunu) have yielded four unrecorded the grass genera from this region. Full description with distribution is provided for each genus in this paper. Voucher specimens have been deposited in the Herbarium of Laboratory of Ethnobotany and Agrostology, Department of Botany, College of Science, Udaipur, Rajasthan.

1. *Arthraxon lancifolius* (Trin.) Hochst. in Flora 39:188, 1856; Fischer in Fl. Mad. 3: 1729, 1934; Blatter and McCann Bomb. Grass. 77, 1935. Bor in Fl. Assam 5:378, 1940. Rhind, Grass, Burma 69, 1945; Raizada in Ind. For. Rec. 4:101, 1954; *Andropogon lancifolius* Trin. in Mem. Acad. Petersb. 6 ser 2:271, 1832; *Arthraxon microphyllus* Hochst. in Flora 39:188, 1856; Hook.f. Fl. Brit. Ind. 7:147, 1996; Haines, Bot. Bih. and Ori. 2:1026, 1924.

An annual. Culms 10-40 cm tall. Leaves lanceolate. Inflorescence: common axis very slender. Sessile spikelets: 2.5-3.5 mm long, straight, linear-lanceolate, almost compressed

laterally. Lower glume 3 mm long.

**Ecology:** A grass of damp habitats, growing in colonies, between rocks on walls of houses.

**Fl. & Fr.:** August-October

**Locality:** Jhunjhunu

**IC number:** 255256 (given by NBPGR, New Delhi)

**Specimen examined:** Takhar, 221

2. *Arundo donax* Linn. sp. Pl. loc. cit. FBI 7:302, 1896; Cook in FPB 3: 574, 1958; Bor in GBCIP 413, f. 44, 1960.

A perennial grass. Culms creeping below, finally erect, 1-6 m tall, hollow many-noded, green, simple or sparingly branched, terete, smooth and glabrous. Inflorescence a large, terminal, decompound, pulmose panicle. Grains 2.5 mm long.

**Fl. & Fr.:** August-October

**Ecology:** This stout reed grows in dry habitats when established, but it prefers plenty of moisture. As a fodder grass it is not of much account, but cattle will browse upon the young leaves.

**Locality:** Ranoli, Sikar and Jodhpur

**IC number:** 255341 (given by NBPGR, New Delhi)

**Specimen examined:** Takhar, 314

3. *Avena sativa* Linn. sp. Pl. ed. 1:79, 1753; Cook in FPB 3:574; 1958; Bor in GBCIP; 434; 1960.

An annual. Culms simple. Spikelets 22-30 mm long or longer usually with a 1-awned floret at the base and one or two awnless floret above or with all the florets awnless. Grain tightly enclosed by the lemma and palea free silky all over.

**Fl. & Fr.:** December- February

**Ecology:** Commonly found in cultivated field of wheat.

**Locality:** Throughout the study area.

**Specimen examined:** Takhar, 312

4. *Bothriochloa intermedia* (R. Br.) A Camus in Ann.

*Soc. Lim.* Lyon, 1930, n.s. 76, 164, 1931; Bor in GBCIP 108, 1960. Perennials, culms tufted. Inflorescence 10-20 cm long. Glumes equal, the lower hairs pitted or not.

**Fl. & Fr.:** August-October

**Ecology:** Found growing occasionally in the grasslands on hillocks

**Locality:** Harshnath, Sikar

**Specimen examined:** Takhar, 223.

#### ACKNOWLEDGEMENTS

We are thankful to the Indian Council of Agricultural Research (ICAR), New Delhi for financial assistance, Forest Research Institute, Dehradun and Botanical Survey of India, Jodhpur for herbarium identification.

### 30. *PONERORCHIS NANA* (KING & PANTL.) SOO (ORCHIDACEAE): A NEW RECORD FOR UTTARAKHAND<sup>1</sup>

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Deva and Naithani (1986) provided the taxonomic account of all known species of orchids from north-west Himalaya and described nearly 239 species, based on the study of herbarium specimens and published records. They reported *Ponerorchis nana* (King & Pantl.) Soo from Himachal Pradesh based on the collections made by B.S. Aswal from Rohtang in Lahul, growing between 3,000-4,000 m altitude. This species was earlier described in India from Sikkim Himalaya by King and Pantling (1898) as *Orchis chmsua* var. *nana* King & Pantl. There has been no collection of this species from any part of Uttarakhand till date. During a recent orchid exploration in Uttarakhand, *P. nana* was collected from an alpine zone of Uttarkashi district, Garhwal Himalaya for the first time. The collection of this species from Garhwal forms an interesting addition to the orchid flora of Uttarakhand.

In this note, a brief description along with a note on the flowering period, ecology and distribution of the species is given. Field number along with the collector's name is given in parenthesis. The voucher specimens are deposited in the herbarium, Wildlife Institute of India (WII), Dehradun.

*Ponerorchis nana* (King & Pantl.) Soo, Acta Bot. Acad. Sci. Hung. 12: 353 (1906); Deva & Naithani, Orchid Fl. North West Him. 199. t. 106 (1986). *Orchis chusua* var. *nana* King & Pantl., Ann. Roy. Bot. Gard. 8: 303. t. 402A (1898). *O. nana*

(King & Pantl.) Schltr. in Feddes Repert. 9: 434 (1911). *Chmsua roborowskyi* var. *nana* (King & Pantl.) P.F. Hunt, Kew Bull. 26: 1876 (1971). *C. nana* (King & Pantl.) Pradhan, Indian Orchid 2: 678 (1978).

Terrestrial, up to 10 cm long with oblong, bilobed tuber; stem with one or two blunt tubular sheaths at the base; leaf one, linear-lanceolate, acute or acuminate, grooved; inflorescence single-flowered; flowers white or purple; bracts lanceolate, acuminate, equalling the ovary; sepals spreading; petals ovoid; lip shallowly 3-lobed with broad truncate apex and crenate margin; spur cylindrical as long as the ovary, somewhat compressed.

**Fl.:** July-August.

**Ecology:** Rare ground orchid that prefers to grow in grassy slopes and meadows at c. 3,600 m.

**Specimens examined:** INDIA: Garhwal: Uttarkashi in Chuli Bugyal (G.S. Rawat 14781 WII).

**Distribution:** INDIA (Uttarakhand-Garhwal; Himachal Pradesh, Sikkim); Nepal.

#### ACKNOWLEDGEMENT

We thank the Director of Wildlife Institute of India (WII), Dehradun for facilities and encouragement.